Assets at Marriage in Rural Ethiopia

Marcel Fafchamps
University of Oxford *

Agnes Quisumbing
IFPRI †

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Abstract

This paper examines the determinants of assets at marriage in rural Ethiopia. We find ample evidence of assortative matching at marriage. Assets brought to marriage are distributed in a highly unequal manner. Sorting operates at a variety of levels – wealth, schooling, and work experience – that cannot be summarized into a single additive index. For first unions, assets brought to marriage are positively associated with parents' wealth, indicating that a bequest motive affects assets at marriage. Unlike most brides, grooms appear to accumulate individual assets over time and over marriages. Parents act strategically in the sense that they bequeath more assets at marriage if this results in a better prospective spouse. The marriage market is a major conduit for rural and gender inequality.

*Department of Economics, University of Oxford, Manor Road, Oxford OX1 3UL. E-mail: marcel.fafchamps@economics.ox.ac.uk. Fax: +44(0)1865-281447. Tel: +44(0)1865-281444.

†International Food Policy Research Institute, 2033 K Street N.W., Washington DC 20006. Tel.: (202) 862-5650. Email: a.quisumbing@cgiar.org.

1. Introduction

In agrarian societies marriage is an event of deep economic importance. First, it typically marks the onset not only of a new household but also of a new production unit, e.g., a family farm. Assets brought to marriage determine the start-up capital of this new enterprise. The success of the enterprise thus depends to a large extent on what happens on the 'marriage market', that is, on the arrangement reached by the bride and groom and their respective families regarding the devolution of assets to the newly formed household. Farm formation cannot be dissociated from marriage market considerations. Second, in an environment where asset accumulation takes time and is particularly difficult for the poor, assets brought to marriage play a paramount role in shaping the lifetime prosperity of newly formed households: well married daughters can expect a life of relative comfort while poorly married daughters may spend most of their life in utter poverty. Assortative matching between spouses – the rich marry the rich, the poor marry the poor – not only increases inequality, it also reduces social mobility due to intergenerational transfers of assets at marriage.

The purpose of this paper is to examine the determinants of assets brought to marriage in rural Ethiopia. We do so in two separate steps. First, we investigate the extent to which the socio-economic characteristics of spouses are correlated. In particular, we examine the correlation between both parental and personal characteristics of husbands and wives at the time of marriage. We find that marriage in rural Ethiopia is better characterized as an assortative matching process rather than as assignment driven by non-economic factors. This is hardly surprising given that most marriages are arranged by parents and relatives. We then investigate how rural society endows new couples with the assets they need to set up a farm and family – typically land and livestock, utensils, grains, and consumer durables such as clothing and jewelry. We find that intergenerational transfers take place primarily at the time of marriage. This is particularly true for men, to whom most productive assets are bequeathed, at marriage or afterwards. We also examine the extent to which parental wealth affects the aggregate amount of wealth that the couple has at the beginning of marriage, controlling for characteristics of the couple which may enable them to accumulate assets on their own. We find that the correlation between parental wealth and wealth at marriage is high, thereby suggesting relatively low intergenerational mobility.

Economic analysis of marriage and the family has grown tremendously since Becker's (1981) Treatise on the Family. Phenomena such as family formation, intergenerational transfers, and the allocation of resources within the family, previously the domain of anthropology and sociology, have increasingly been subject to economic investigation (e.g. Bergstrom 1997, Weiss 1997, Becker and Tomes 1986, Behrman 1997, Haddad, Hoddinott and Alderman 1997). Marriage, in particular, is an institution of great interest, since, in many developing countries, it represents the union not only of two individuals, but also of two family or kinship groups. Moreover, in many societies, marriage is the occasion for a substantial transfer of assets from the parent to the child generation. Lastly, recent work testing the collective versus the unitary model of household decision making has paid increased attention to conditions prevailing at the time of marriage. In particular, it has been shown that the distribution of assets between spouses at the time of marriage acts as possible determinant of bargaining power within marriage (e.g. Thomas, Contreras and Frankenberg 1997, Quisumbing and de la Brière 2000, Quisumbing and Maluccio 1999). While it can be argued that assets at marriage do not completely determine the distribution of assets upon divorce Fafchamps and Quisumbing (2000), these measures are, in themselves, worth investigating because they shed light on the institution of marriage and inheritance in rural societies.

This paper differs from these other works in several respects. First, we distinguish assortative matching from assets brought to marriage. Second, we separate factors that affect intergenerational transfers from those that reflect the relative scarcity of brides and grooms. Third, unlike other marriage market studies which focus on dowry and brideprice *per se*, that is, on transfers at marriage from one family to the other (e.g. Rao 1993, Foster 1996), we examine the totality of assets brought to marriage, whether these were acquired from parents or other sources prior to marriage or received at the time of marriage. This more inclusive measure is more appropriate in rural Ethiopia because gifts from the families to each other and to the couple account for a small proportion of assets brought to marriage. The main purpose of these gifts seems to be to seal the marriage and cover the cost of the wedding rather than to endow the new couple. This lesson should be kept in mind when conducting marriage market studies in other (African) countries.

Ethiopia is an ideal site for studying marriage customs, since it is characterized by extensive agro-ecological and ethnic diversity. Different religions, with widely divergent views regarding matrimonial issues and the status of women, are well represented and tend to dominate different parts of the country- the Orthodox church of Ethiopia in the north, Sunni Muslims in the east and west, recently converted Protestants in the South, and animist believers in parts of the south. The ethnic and cultural makeup of the country is also quite varied, with Semitic traditions in the north, Cushitic traditions in the south and east, and Nilotic traditions in the west. Climatic and ecological variation is equally high, given the mountainous terrain and the fact that the country stretches from the dry Sahel to the humid equatorial zone. Finally, local traditions have remained largely untouched given the lack of roads and the relative isolation of the countryside.

The paper is organized as follows. We begin in Section 2 by laying out the conceptual framework for our analysis. A brief description of the survey and the survey area follows in Section 3. Assortative matching is examined in Section 4. We continue in Section 5 with a descriptive analysis of assets brought to marriage, disaggregated by number of unions, and examine the possibility that assortative mating characterizes Ethiopian marriages using various correlation measures. We also examine the determinants of the value of assets brought to marriage by the bride and groom and show that intergenerational transfer considerations affect the aggregate amount transferred to the new family unit. The distribution of assets at marriage between spouses is analyzed as a function of personal, parental, and marriage market characteristics. Section 6 concludes.

2. Conceptual Framework

Economic analysis of marriage typically focuses on the gains from marriage and its distribution among the partners involved. These gains range from joint production and consumption of public goods (e.g. children), division of labor, and risk-pooling. They are maximized if the union is likely to last (Weiss 1997). The decision to form a particular union thus depends not only on the specific merits of a particular match, but also on the whole range of opportunities available to each partner. Since individuals in any society have many potential partners, this situation creates competition over the potential gains from marriage.

Following Becker (1981), we model the 'marriage market' as a process by which a bride and a groom are paired with each other from a population of suitable grooms and brides. The welfare W of the newlyweds depends upon what they bring to marriage, namely physical wealth A_m and A_f and human capital H_m and H_f, where m stands for groom and f stands for bride. We have:

$$W = W(A_m + A_f, H_m, H_f; Z) \tag{2.1}$$

where Z represents a vector of location or time-specific factors that exogenously affect the utility from marriage. We assume that $\frac{\partial W}{\partial A}' > 0, \frac{\partial W}{\partial H_m}' > 0$, and $\frac{\partial W}{\partial H_f}' > 0$: the utility from marriage increases with assets and human capital.

An interesting special case is when human capital is only valued for its income generating potential and there are no externalities from one spouse's human capital to the other's. In this case, the utility from marriage can be written:

$$W = W(A_m + A_f + \gamma_m H_m + \gamma_f H_f; Z) \tag{2.2}$$

where γ_m and γ_f denote life-time returns from human capital, with $\gamma_m > 0$, and $\gamma_f > 0$. In this special case, brides and grooms can be unambiguously ranked: all brides prefer grooms with high $A_m + \gamma_m H_m$ and all grooms prefer brides with high $A_m + \gamma_m H_m$.

Equation (2.2) is not true in general, however. For instance, if there are positive externalities in education and farming, highly educated grooms prefer highly educated brides while grooms with farm experience prefer brides with farm experience – and vice versa. In this case, grooms rank brides differently depending on their own characteristics. With externalities, grooms and brides are ranked according to multiple attributes. The same conclusion holds if preferences are correlated, so that individuals with particular traits prefer to choose mates with similar traits.

We now move to the marriage market proper. There are M potential grooms and F potential brides in the economy, each with an endowment of assets A_i and human capital H_i. If equation (2.2) holds,

then without loss of generality, potential grooms and brides can be indexed according to their physical and human capital such that:

$$A_m^1 + \gamma_m H_m^1 > A_m^2 + \gamma_m H_m^2 > ... > A_m^M + \gamma_m H_m^M$$

$$A_f^1 + \gamma_f H_f^1 > A_f^2 + \gamma_f H_f^2 > ... > A_f^F + \gamma_f H_f^F$$

Empirical modeling of marriage markets, with the exception of a few studies that have used census data to model potential matches (Foster 1996), has thus been stymied by the absence of data on all potential matches, although proxies for potential opportunities-whether in the marriage or labor markets-have been used in other studies (Rao 1993).

For simplicity, assume that each of the above inequalities is strict. According to Becker, a pairing of potential brides and grooms is *not* a marriage market equilibrium if a groom (bride) wishes to attract another bride (groom) and this bride (groom) prefers to marry this groom (bride) than her (his) currently allotted partner. Ignoring polygamy, an assignment is stable if (1) there is no married person who would rather be single; and (2) there are no two persons who both prefer to form a new union with each other. Given our assumptions, we have:

Proposition 1. *(Assortative Matching) If equation (2.2) holds, the marriage market equilibrium is unique. In this equilibrium, the top ranked groom marries the top ranked bride, the second ranked groom marries the second ranked bride, etc. In the absence of polygyny and polyandry, supernumerary brides (if $M < F$) or grooms (if $M > F$) do not marry. (Proof: See Becker (1981).)*

Assortative matching implies that if we should observe a perfect rank correlation between the combined physical and human capital of all brides and grooms in a given marriage pool. Testing this simple prediction is the object of Section 4. Spearman correlation coefficients are computed for each of the main asset categories. To compute the correlation on joint physical and human capital, we estimate parameters γ_m and γ_f using canonical correlation (e.g. Hotelling 1935, Hotelling 1936, Wicks 1962). To control for location and time factors, we subtract location-time specific averages from each variable so that ranks are expressed relative to their village and time of marriage.

The presence of assortative matching also makes it possible to investigate the existence of a single ranking for brides and grooms.

Proposition 2. *(Single ranking) Consider observations on a vector of bride and groom attributes X_m and X_f. If the welfare from marriage can be written as in equation (2.2), then there exist parameters β_m and β_f such that the correlation between $\beta_m X_m$ and $\beta_f X_f$ exhausts the relationship between X_m and X_f. (Proof: Let $\beta_m = \{1, \gamma_m\}$ and $\beta_f = \{1, \gamma_f\}$. This proves existence. Given equation (2.2), assortative matching implies that once we control for the correlation between $\beta_m X_m$ and $\beta_f X_f$, there does not exist another (orthogonal) index constructed using X_m and X_f that is also correlated across brides and grooms.)*

The idea behind the single ranking proposition is that, if individuals are ranked according to multiple attributes, attributes will be correlated with each other but it is not possible to 'summarize' the correlation between all bride and groom attributes with the help of a single, optimally chosen index. In contrast, if the welfare from marriage follows equation (2.2), then such an index exists and it explains all the correlation between attributes that is present in the data. We test single ranking in Section 4 using canonical correlation analysis. Single ranking can only be tested with respect to attributes observed by the researcher. Even if we fail to reject single ranking for observed attributes, there may be other, unobserved attributes (kinship and family ties, personal traits, geographical proximity) that violate it.

The marriage market equilibrium does not, however, provide a complete characterization of assets brought to marriage. Since these assets in large part come from the parents of the bride and groom, bequest considerations come into play as well. In agrarian societies, most inheritance indeed takes place at marriage. The bequest choice facing altruistic parents marrying off their children can thus be represented as:

$$\max_{A_m, A_f, H_m, H_f} U(S - \sum_b A_m - \sum_g A_f - \sum_b sH_m - \sum_g sH_f; Z) +$$

$$\sum_b \omega_b W(A_m + \overline{A}_f + \gamma_m H_m + \gamma_f \overline{H}_f; Z) +$$
$$\sum_g \omega_g W(\overline{A}_m + A_f + \gamma_m \overline{H}_m + \gamma_f H_f; Z)$$

where the b and g subscripts denote boys and girls, respectively, $U(.)$ is the utility of parents, S is their wealth, s is the cost of human capital (e.g., school fee), and the ω's are welfare weights for sons and daughters. Variables A_m and A_f denote the assets given to sons and daughters as they marry; H_m and H_f denote their level of human capital. Variables $\bar{A}_m$, $\bar{A}_f$, $\bar{H}_m$, and $\bar{H}_f$ represent the assets and human capital of the people sons and daughters marry. For simplicity, we have assumed symmetry among sons and among daughters.[1] We also assume that $W'' < 0$, so that parents have an incentive to equalize the welfare of their children.

The solution to the parents' choice can be characterized as follows:

1. Given symmetry, all sons and all daughters are treated equally.
2. Sons and daughters receive more if their welfare weight is larger, parents are wealthier, or they have fewer siblings.
3. Parents invest more in human capital relative to assets if the cost of human capital s is lower or the return to human capital γ_i is higher.

Parents' bequest decision also depends on their expectations regarding marriage market outcomes. For instance, if they expect husbands to bring lots of assets to marriage, i.e., if $\bar{A}_m$ is large and $\bar{A}_f$ is small, they compensate by giving less to daughters and more to sons, themselves contributing to the observed pattern of bequeathing more to sons. Bequest patterns are thus influenced by expectations regarding the marriage market. Since bequest patterns are self-reinforcing, multiple bequest equilibria are possible, such as patterns in which all assets go to sons, all assets go to daughters, or assets are divided equally among sons and daughters. Multiplicity can be resolved by resorting to social norms.[2] In addition, parents may also realize the effect that bequest has on marriage market outcomes, i.e., they may internalize the dependence of $\bar{A}_m$ on their own choice of A_f. In this case, parents bequeath more to their children since doing so raises their marriage prospects. For instance, if $\bar{A}_m = \alpha_m^0 + \alpha_m^1 A_f$, then the choice of A_f is decreasing in α_m^0 but increasing in α_m^1. Although an equilibrium analysis is beyond the scope of this paper, it should be clear that the resulting bequest and marriage market equilibrium need not result in a superior match if all parents choose bequest in a strategic manner. It is nevertheless expected to raise bequest at marriage. It should also yield more inequality in the distribution of assets at marriage as parents compete for high ranked brides and grooms for their children.

To summarize the above discussion, we expect that assets brought to marriage by each spouse increase in the wealth W of their respective parents and in the return γ_i to human capital, and decrease with the number of their siblings, the cost s of human capital, and marriage market expectations $\bar{A}_m$, $\bar{A}_f$, $\bar{H}_m$, and $\bar{H}_f$. If parents choose bequest strategically, assets brought to marriage also increase with α_m^1. Testing these predictions is the objective of Section 5.

The above conceptual framework is not, however, the only possible one. For instance, it is also conceivable that the parents of the bride and groom jointly decide how to endow their offspring. Dropping human capital to simplify notation, this situation can be represented as:

$$\max_{A_m, A_f} \omega_p U(S_p - A_m; Z) + \omega_q U(S_q - A_f; Z) + (\omega_b + \omega_g) W(A_m + A_f; Z)$$

where the ω's represent welfare weights and subscripts p and q stand for the groom's parents and the bride's parents, respectively. In this framework, assets devoted to the newlyweds are decided jointly, one set of parents compensating for the other. Total assets at marriage $A_m + A_f$ are a function of the wealth levels of both sets of parents S_p and S_q. Joint decision can thus be tested as a pooling restriction. Other possibilities are discussed and investigated in their respective estimation sections.

[1] For a discussion of asymmetric bequest norms such as primogeniture, see for instance Platteau (2000) and Chu (1991).

[2] Note that, even if parents are *ex ante* indifferent between social norms, they are not indifferent *ex post*. For instance, they will prefer bequest norms that favor sons if they have daughters. This is because wealth bequeathed to daughters comes in addition to that already provided by husbands. The opposite is true if brides bring most assets: it is difficult for parents with many daughters to ensure a high level of future utility for them.

3. Study site and survey description

Having presented our conceptual framework and outlined our testing strategy, we purport to apply these ideas to marriage outcomes in rural Ethiopia. The choice of country is dictated by the fact that Ethiopia is primarily an agrarian economy where marriage market issues are important determinants of welfare. Ethiopia is indeed a low-income, drought-prone economy with the third largest population on the African continent. While some work has been done on South Asia (Foster 1996) and West Africa (Jacoby 1995), very little is known about marriage markets in East Africa. An additional attraction of Ethiopia as a study site is that it has extensive agro-ecological and ethnic diversity, with over 85 ethnic groups and allegiance to most major world and animist religions (Webb, von Braun and Yohannes 1992). This diversity should provide enough variety in marriage market outcomes to identify important determinants.

For our analysis, we rely on the 1997 Ethiopian Rural Household Survey (ERHS) which was undertaken by the Department of Economics of Addis Ababa University (AAU) in collaboration with the International Food Policy Research Institute (IFPRI) and the Center for the Study of African Economies (CSAE) of Oxford University. The 1997 ERHS covered approximately 1500 households in 15 villages across Ethiopia, capturing much of the diversity mentioned above. While sample households within villages were randomly selected, the choice of villages themselves was purposive to ensure that the major farming systems were represented. Thus, while the 15 sites included in the sample may not be statistically representative of rural Ethiopia as a whole, they are quite representative of its agro-ecological, ethnic, and religious diversity.

The questionnaire used in the 1997 round includes a set of fairly standard core modules, supplemented with modules specifically designed to address intrahousehold allocation issues, particularly conditions at the time of marriage. These modules were designed not only to be consistent with information gathered in the core modules, but also to complement individual-specific information. These modules were pretested by the authors in February/March 1997 in four non-survey sites with a level of ethnic and religious diversity similar to the sample itself. Data collection took place between May and December 1997. Questionnaires were administered in several separate visits by enumerators residing in the survey villages for several months. Careful data cleaning and reconciliation across rounds were undertaken in 1998 and 1999 by Bereket Kebede and IFPRI staff.

The intrahousehold modules collect information on: the parental background and marriage histories of each spouse; the circumstances surrounding the marriage (e.g. type of marriage contract, involvement in the choice of a spouse); and the premarital human and physical capital of each spouse. A variety of assets brought to the marriage were recorded, as well as all transfers made at the time of marriage. These questions, which were asked separately for each union listed by the household head, pertained to assets brought to marriage by the head and his spouse(s) (or if the household head was female, for herself and her last husband). Questions were as exhaustive as possible; they covered the value and quantity of land and livestock, as well as the value of jewelry, linen, clothing, grains, and utensils that each spouse brought to marriage. In the analysis, values at the time of marriage are converted to current values using the consumer price index. Given the difficulties inherent in a long recall period and in the choice of an inflation correction factor suitable for all 15 villages, these values are likely to be measured with error. We also collected information on the value of the house brought to marriage by each spouse, if any. Although questions were asked about cash as well, they yielded very few responses, if any. This is because accumulation in the form of cash or financial instruments is essentially absent in the study area. Questions were asked about transfers from the bride's and groom's families at the time of marriage, whether to the couple, or to a specific individual. Parental background information was collected for each spouse and each union; these included landholdings of the parents at the time the household head was married, as well as educational attainment of each parent of each spouse. Human capital characteristics of each spouse included age, education, and experience in three categories of work prior to marriage: farm work, wage work, and self-employment.

One asset, land, deserves a few words of caution. For some twenty years prior to the survey, rural land was owned by the Ethiopian state and distributed to individual farmers by the Peasants' Association (PA), a local authority operating at the village level. Land is then periodically reallocated between farmers to accommodate the needs of young couples. Between these reallocations, farmers hold full user rights on the land. In practice, reallocations have occurred rather infrequently. Different regions also seem

to have interpreted the law differently, some opting for a collectivist approach while others essentially followed the old system of inheritance (e.g. The World Bank 1998, Gopal and Salim 1999). Young couples typically obtain land through their parents, either directly (gift or land loan) or indirectly by having their parents lobby the PA. It is also worth noting that, although the sale of agricultural land has been illegal in Ethiopia for over twenty years, virtually all surveyed households were able to value the land they had brought to marriage. This leads us to expect that, in rural Ethiopia, parents continue to determine the land base of newly formed couples.

Table 1 breaks down the sample by household category. We see that twenty percent of surveyed households are headed by unmarried individuals, most often divorced or widowed women. Monogamous couples living together represent some 62% of the sample. Polygamous households – or parts thereof – account for 7.6% of the sample, while separated couples account for the remaining 9%. Starting from these household level data, we construct a marriage data set that contains information recorded for each union separately. The rest of the analysis presented here is based on this union-level data set.

Survey results show that grooms bring nearly ten times more assets than brides to the newly formed family unit (Table 2), an average of 4,270 Birr (in 1997 prices), compared to 430 birr for brides. For grooms, land is the asset with the highest average value. The next most valuable asset is livestock, followed by grain stocks and other minor assets. In contrast, brides bring very little land to the marriage. They bring some livestock but less than grooms. Two-thirds of the brides report bringing no asset to marriage. Gifts at the time of marriage are distributed more evenly between the groom and the bride but they are very small relative to assets brought to marriage, except for the bride where they are roughly equivalent. The survey area can thus be described as a system where grooms bring most of the start-up capital of the newly formed household.

There is a lot of inequality with respect to assets brought to marriage (Table 3). The Gini coefficient for all combined assets is 0.624. Married couples thus do not all start equal. Some have much more assets with which to create a new farming enterprise. Given the difficulty of asset accumulation in a poverty stricken environment (e.g. Deaton 1990, Fafchamps 1999), assets at marriage probably have an durable effect on income and wealth inequality across rural Ethiopian households. Gini coefficients for individual assets are higher than for total assets combined, the highest being for land. This is a paradoxical finding, given that the stated objective of the state-run land allocation system is to give land to the tiller. Because land reallocations do not take place every year, however, many starting couples have no land of their own, unless they are fortunate enough that their parents can spare land for them or unless they had already gained access to land prior to marriage. Inequality is also very large in initial livestock assets, an area in which there has been very little if any government intervention. That inequality in land and livestock at the creation of new farm units are roughly of the same magnitude suggests that redistribution objectives have not been met, in spite of 17 years of Marxist-Leninist rhetoric. It is of course conceivable that inequality in access to land diminishes over time as periodic land reallocations shifts land toward younger generations, but we do not have the time to pursue the issue further in this paper. We also observe extreme inequality in assets brought to marriage by brides: most brides bring nothing while a few bring a lot. In such a polarized society, the presence of a few rich brides is bound to attract competition.

Regarding human capital, newly weds in rural Ethiopia bring very little in terms of education: one male out of four and one woman out of 10 has been to school. If we include other forms of education such as literacy campaigns and religious education, only one third of surveyed husbands have a minimum level of literacy. Work experience prior to marriage is more extensive, especially for men who typically have 12 years of farming experience at the time of marriage, vs. 4 years for brides. This is a reflection of both the younger age of brides and the fact that women participate minimally in field work. Age at marriage also differs markedly, with an average age gap of 10 years. Work experience other than farming is extremely limited, especially for women – a finding consistent with the negligible role of non-farm employment in the Ethiopian countryside.

Table 4 breaks down married couples by number of marriages of each spouse. While the majority of surveyed husbands (57%) and a higher proportion of wives (67%) have been married only once, multiple marriages are common. Twenty-three percent of husbands have been married twice, and 11% have been married thrice. Although we observe men who have been married more than three times, they account for only nine percent of the sample. Multiple unions are also common among wives, with 23% having been married twice, and 7% thrice. Only three percent of wives have been married more than thrice, and

these numbers are driven by individuals with a large number of spouses.

Table 4 presents characteristics of each spouse, disaggregated by the number of unions. Grooms seem to bring more land, livestock, and assets to subsequent marriages. This is associated with being older and having more work experience. The same upward trend is not observed for brides: while women who have been married twice bring more assets to marriage than those who have been married only once, brides who have been married thrice have even fewer assets than those who were married only once. Neither does work experience increase for brides in higher unions. These preliminary findings need to be confirmed by multivariate analysis, as they could result from correlation between multiple forces that affect assets brought to marriage. This is done in Section 5.

4. Assortative Matching

We now examine whether marriage in rural Ethiopia is characterized by assortative matching. To begin, we compute Spearman correlation coefficients for the major forms of physical and human capital brought to marriage. We also compute rank correlation for parents' characteristics such as land and schooling, in case the model presented at the end of Section 2 fits the data best. As argued in Section 2, rank correlation is a better concept to test assortative matching than regular correlation. For the approach to be appropriate, however, ranks must be computed within a given marriage pool, that is, individuals must be ranked relative to other individuals with whom they competed for a mate. It would indeed make little sense to rank someone who married yesterday at one end of the country relative to someone who married 30 years ago at the other end. All ranks are therefore computed within district and decade since marriage.[3] We also distinguish between first marriage and subsequent marriages. To the extent that parents play a more dominant role in the choice of a spouse at first marriage, we expect them to follow economic motives more closely than their impulsive offspring. If this interpretation is correct, assortative matching should be more pronounced at first marriage.

Results, presented in Table 5, are highly suggestive of assortative matching. It is extremely unlikely (in fact, virtually impossible given the reported p-values) that the relative ranks of brides and grooms would be so closely correlated if marriage pairing was purely random. Brides and grooms appear to be sorted along all measured characteristics, whether physical or human capital. Matching in subsequent unions seems less dictated by assets and more by human capital. From this evidence, it is difficult to conclude that assortative matching is stronger at first marriage. Closer inspection of the data reveals that parents are about as likely to be involved in the choice of a mate at first marriage as at subsequent marriages. To investigate this issue further, we compute rank correlation coefficients separately for brides who had a say on the choice of a spouse and those who did not. Results, reported on Table 5, suggest that brides' involvement increases assortative matching, particularly at first marriage. If anything, brides' behavior is more consistent with cold rationality as portrayed in our marriage market model. Results also show that human capital becomes more important in sorting spouses at subsequent marriages and when brides have a say. This suggests that parents pay more attention to wealth while children worry more about commonality of professional or personal interests.

Next we investigate whether brides and grooms are ranked according to a single composite attribute, such as income earning capacity. If a single composite index cannot be found, it suggests that a uniform ranking of spouses does not exist. Consider observations on wealth and education of the bride and groom, for instance. If education matters only through its effect on future income, then a single ranking of brides and grooms must exist that uses the return to education to translate years of schooling into a wealth equivalent. In contrast, if the utility from marriage depends on multiple attributes in a non-additive manner, there will exist several correlated indices of wealth and education that are orthogonal to each other. Each index captures one dimension or 'composite attribute' along which assortative matching takes place.

To test these ideas, we estimate canonical correlations between individual attributes of bride and grooms. Given two sets of variables X_m and X_f, canonical correlations construct several indices $z_m = \beta_m X_m$ and $z_f = \beta_f X_f$ (as many as the dimension of vectors X_m and X_f) such that the correlation

[3] The size of geographical unit and time lag was dictated by the need to preserve a sufficiently large cell size. By crossing district dummies with decade since marriage, we obtain cell sizes of roughly 20 brides and 20 grooms. Ranks are computed within each of these cells. Results are virtually identical if we only control for district, with cell size of 80.

between each z_m and z_f is maximized subject to the pair of indices being orthogonal to each other. In practice, canonical correlations are computed by taking the eigenvalues of a transformation of the cross-correlation matrix (Wicks 1962). If the two sets of variables are related to each other only through a single index/linear transformation, as is the case when utility from marriage follows equation 2.2, then one of the canonical correlations will capture most if not all the correlation between the two vectors. Other (orthogonal) indices will carry no additional information and correlation will be small and non-significant. If, in contrast, there exist multiple indices, more than one canonical correlation will be significant.

Results are summarized in Table 6. We limit our presentation to the most instructive results. One robust result is that schooling and wealth are marriage market attributes that are virtually orthogonal to each other. The first of the two canonical indices constructed using wealth and schooling de facto depends only on education; the second depends only on wealth. This suggests that single ranking is not satisfied in our sample: better educated grooms rank educated brides relatively better than uneducated grooms. Virtually identical results are obtained if land or livestock wealth are used instead of total wealth at marriage. Table 6 also reports similar results for various forms of wealth or work experience: they seldom can be regarded as generating a single ranking of potential brides and grooms. Taken together, these results strongly reject single ranking: brides and grooms are ranked according to multiple attributes over which preferences differ in a systematical fashion, probably because of externalities in production and of search for a commonality of professional interests.

In Table 7, we also report canonical correlations on the ranks of brides and grooms in various dimensions. We have no a priori expectation regarding these correlations since rank differences do not tell anything about the magnitude of the differences in variable level. At most we expect a slight correlation. Results nevertheless indicate that a single index exists that predict a person's marriage match extremely well: the coefficient of correlation between the bride's and groom's index is 0.87. This index is a weighted sum of the ranks of the bride and groom along the 5 characteristics reported in Table 7. A correlation of 0.84 is obtained using an unweighted sum of ranks instead. These puzzling results suggest that participants in the marriage market do not rank potential mates according to an 'objective', welfare-based criterion but rather seek someone who scores well on a number of dimensions. More research is needed on this topic.

5. Assets Brought to Marriage

We now test the predictions of the bequest-at-marriage model outlined in Section 2. We begin with a set of reduced form regressions in which the dependent variable is the total value of all assets brought to marriage. As before, all values are expressed in 1997 Ethiopian Birr. Assets include land, livestock, grain, clothes, linens, jewelry, household utensils, and cash. We also run regressions on land, livestock, and other assets separately. The dependent variable is expressed in logarithms.[4] Because of censoring, tobit is the chosen estimator. The analysis is conducted for all marriages combined as well as for first unions and subsequent unions separately. Since more male than female respondents were previously married, the number of observations for subsequent unions is larger for men than women. This is but a reflection of the large age gap between men and women at marriage, combined with the fact that, in rural Ethiopia, previously married women are much less likely to remarry than men.

Assets brought to marriage by the bride and the groom are regressed on parental wealth W (measured by parental land and a dummy that equals one if father went to school[5]) and total number of siblings. We include the ratio of sisters in siblings to control for the possibility of gender differentials in inheritance. We expect parental wealth to raise assets brought to marriage, and number of siblings to reduce it. We also control for the age at marriage and the number of previous unions. We expect older individuals to bring more assets to marriage since they and their parents have had more time to accumulate. Since individual accumulation begins at marriage, the existence of previous unions should also raise assets brought to marriage, especially for women.[6] Returns and cost of education, as well as other location-specific factors,

[4] To avoid losing observations, zero observations are replaced by 1 Ethiopian Birr, roughly the equivalent of 25 US cents.

[5] This is the best we can do, given the very low levels of schooling parents of respondents have.

[6] Young, never married women may make more desirable brides. This would raise their marriage prospects (i.e., the assets of their expected match) but it should not raise the assets they bring to marriage. If anything, it should lower them. Indeed, if parents wish to achieve comparable levels of lifetime welfare for their children, they would compensate children with less attractive marriage prospects by giving them more assets – and thus by giving fewer assets to otherwise more

are controlled for through village dummies. Ethnicity and religion are added as regressors to control for cultural differences in attitudes toward bequest. To control for the possibility of a time trend in marriage practices, the number of years since marriage is included as regressor as well.

Results are summarized in Tables 8 and 9 for groom and bride respectively. In both cases, we see that parental wealth – measured by father's land – has a strong positive effect on assets brought to marriage. The effect is particularly pronounced for women: a 10% increase in the land of the bride's father results in a 10% increase in the assets she brings to marriage. The effect is only significant at first marriage. These results are consistent with the bequest-at-marriage motive: wealthier parents pass on part of their wealth to their children at first marriage. No further bequest is made at subsequent marriages. Age at marriage is also a strong determinant of assets brought: even after controlling for number of previous unions, older brides and grooms tend to bring significantly more assets. The effect is significant for brides and grooms at first union, but only significant for grooms at subsequent unions: women do not appear to accumulate assets as they age or marry several times. One possible interpretation of the age effect is thus that parents compensate children who marry late – and work longer on their parents' farm – by endowing them better at marriage. This interpretation is consistent with qualitative information collected during the survey. There are very strong village-level effects, a sign of sharp wealth differences across regions. With the exception that Oromo brides bring more assets at first marriage, we find little evidence of ethnic or religion effects. Regional differences in assets brought to marriage thus seem more due to geographical than cultural factors. We find no evidence of sibling competition or time trends.

To further investigate the bequest interpretation, we estimate similar regressions using as dependent variable assets inherited after marriage. For men, three quarters of inherited wealth is land while the rest is livestock; the opposite is true for women. Results (not shown here for the sake of brevity) indicate that the groom's number of brothers has a strong negative effect on inheritance. This effect is very close to – and not significantly different from minus one. This is a clear indication of sibling competition in inheritance: since both inheritance and number of siblings are expressed in logs, we would indeed expect a coefficient of minus one if inheritance is equally divided among siblings. With sisters, competition is much less pronounced, an expected result since women inherit much less in general. Results also show that assets brought to marriage by the groom have no influence on subsequent inheritance.[7] For brides, however, parental land and assets brought to marriage are strong positive predictors of subsequent inheritance.[8] This suggests that what brides receive at marriage is not really an advance on their inheritance, but rather a gift that foreshadows an (albeit unlikely) inheritance yet to come. In contrast, grooms' assets at marriage might in part be regarded as advanced inheritance.

Results for individual assets brought to marriage are reported in Tables 10 to 12. We focus on the groom's assets only due to the small number of non-zero observations for individual assets brought by brides. By and large, the Tables confirm earlier findings. Parental land is shown to be a strong determinant of land at marriage. This finding suggest that the land redistribution role of the PA is insufficient to ensure equal access to land for all young couples. Time trend effects are shown affect the composition of assets at marriage. Over time, the (deflated) value of land brought by grooms has increased dramatically.[9] Since a similar increase in not shown when area is used as dependent variable instead of land value, this suggests that the value of land has increased faster than inflation – probably because of increased population pressure. In contrast, the value of livestock has decreased over time, most probably because of a drop in the number of animals. Taken together, these results suggest that young couples in rural Ethiopia today start their life with fewer productive assets than their parents.

Next we investigate whether human capital characteristics of the bride and groom affect the assets they bring to marriage. If schooling or work experience are treated as a substitute for wealth, we would expect parents to give less educated children more wealth (Quisumbing 1994). A negative sign on human capital would thus signal parents' desire to compensate their less educated children. On the other hand, a bride or groom with more work experience may also have accumulated more assets or may have built

desirable brides.

[7] In some specifications, the effect is negative, as one would expect if assets brought to marriage are a form of bequest. The effect is not significant, however, probably because we do not adequately control for parents' wealth at the time of marriage.

[8] Brides do not, in general, inherit anything – only 11% of them do. It is possible that they only inherit in the absence of an eligible male heir. This issue deserves more investigation.

[9] Brides bring very little land.

more implicit claims on their parents' resources. We would thus observe a positive sign on human capital if assets brought to marriage partly reflect the individual work effort of the bride and groom.

We regress assets brought to marriage on the same regressors plus four measures of human capital: a schooling index and years of work experience at marriage in three activities: farming, wage work, and non-farm self-employment. Results are shown on Tables 13 and 14 for groom and bride, respectively. Results suggest that, if anything, the groom's farming experience has a positive effect on assets brought to marriage, but the effect is not significant.[10] Years of wage work tend to reduce assets brought to marriage, a finding probably due to the correlation between menial wage work and a history of poverty and landlessness. Better educated grooms get significantly more land at marriage, a finding inconsistent with a desire by parents and PA to compensate less educated new couples by giving them more land. Results for brides are in general inconclusive: their human capital seems to have little effect on the assets they bring to marriage. The only exception is for assets other than land and livestock: brides with farming experience bring fewer of them. This effect is consistent with the parental substitution effect discussed above, but it should be discounted given that no such effect is observed with other types of assets.

Next, we investigate the effect that marriage prospects have on assets brought to marriage. In Section 2, we saw that the effect of marriage prospects on parents' bequest at marriage can be decomposed into two parts: non-strategic and strategic. The non-strategic effect is that parents are less motivated to give to their children if their marriage prospects are good. In this case, the assets brought to marriage by the expected match crowd out parents' bequest at marriage. The strategic effect is when parents seek to improve their children's marriage prospect by bequeathing more. The first effect depends on the expected *level* of assets of the marriage match; the second effect depends on the *slope* of the marriage match relationship, i.e., the amount by which prospects are improved for every unit of assets at marriage.

We estimate these effects as follows. Except for individual characteristics that also affect bequest directly, level effects are essentially common to all individuals in a particular region and time period. It is therefore possible to control for level effects via marriage market dummies. To this effect, we assume that a married person is essentially active in his or her marriage market in the years immediately surrounding marriage. In practice, we divide years from marriage into decades and construct marriage market variables as indicator functions indicating the village and decade of marriage of the observed union. To obtain an estimate of the slope effect, we proceed as follows. Let A_m and A_f stand for assets brought to marriage by the groom and the bride, respectively. Consider all the A_m^i and A_f^j of the i males and j females in a particular marriage market (i.e., region and time period). Perfect assortative matching would dictate that the top groom marries the top bride, etc. Ranking all A_m^i and A_f^j thus yields estimates for expected matches $\bar{A}_m^j$ and $\bar{A}_f^i$. The slope of the marriage prospect relationship can be computed as the increase in expected match that would be brought about by an increase in own assets just sufficient to upset the marriage ranking. More formally, the individual specific slope s_m^i is calculated as:

$$s_m^i = \frac{\bar{A}_f^{i+1} - \bar{A}_f^i}{A_m^{i+1} - A_m^i}$$

By construction, $s_m^i > 0$. A similar slope measure is computed for brides:

$$s_f^j = \frac{\bar{A}_m^{j+1} - \bar{A}_m^j}{A_f^{j+1} - A_f^j}$$

The correlation between estimated slopes and the ranking itself, i.e., between s_m^i and $\bar{A}_m^i$ is very low: individuals with high marriage prospects are not necessarily more likely to face strong strategic incentives.[11] The distributions of s_m^i and s_f^j are highly skewed. In the regression analysis, the logarithm of both variables is used instead. Time since marriage is dropped from the regression since it is implicitly included in the marriage market dummy variables. Ethnicity and religion dummies are dropped because of multicollinearity.

[10] Marginally significant for land.

[11] The absence of correlation is reassuring: since by construction $\bar{A}_f^i$ and A_m^i are correlated, an observed correlation between A_m^i and s_m^i could have been spurious.

Regression results including both level and slope effects are reported in Tables 15 and 16. The slope effect is positive and highly significant in all regressions, except for other assets in the bride regressions. It is also large in magnitude. These results suggest that strategic considerations affect the bequest behavior of parents at the marriage of their offspring. The effect is particularly strong for grooms. Other effects are essentially unchanged, except for the fact that the number of previous unions is now shown to have a positive effect on livestock and other assets brought to marriage. The most likely explanation is that people who have been married several times have had more time to accumulate wealth.

Before concluding, we test whether the parents of the bride and groom indeed act as one when they decide to endow their offspring. So far we have assumed that they participate in the competition for bride and groom and we have shown that they use their own assets to leverage better marriage prospects for their children. In Section 2, however, we pointed out that alternative models of parental behavior are conceivable. In one of these, conditional on a match having taken place, parents pool their resources so that if the parents of groom cannot afford to give much, the parents of the bride pitch in more. Pooling test results are presented in Table 17 in which we regress total assets at marriage on the total land of the bride and groom's parents, and test whether the coefficients are the same. Results are different for first and subsequent marriages. At first marriage, the land of the groom's parents has a strong influence on total assets brought to marriage by the bride and the groom together; the land of the bride's parents does not. Pooling is rejected. Parental education has no effect on assets at marriage, probably because so few parents in the sample received any education. In contrast, parental land has no effect on assets brought to subsequent marriages. In this case pooling cannot be rejected but this simply reflects that none of parental characteristics are significantly different from zero. These results further confirm that the marriage market model fits the data better than more benign cooperative models of household formation.

6. Conclusion

We have examined the determinants of assets brought to marriage in rural Ethiopia. These determinants indeed shape the distribution of assets and incomes in a society characterized by widespread poverty – hence where it is difficult to accumulate. Assets at marriage also affect farm size distribution since newlyweds typically initiate their own, separate farming operations. Assets brought at marriage thus constitute the dominant form of start-up capital for new farms.

Results indicate that assets brought to marriage are distributed in a highly unequal manner. This is true for all assets. We find no difference in the magnitude of inequality at marriage between land and livestock, in spite of two decades of a stated 'land to the tiller' government policy and (virtually) no intervention to redistribute livestock. These findings suggest that the land reallocation mechanism as practiced by Peasant Associations tends to penalize young couples. Given the extent of inequality at marriage, land inequality is likely to endure in rural Ethiopia for the foreseeable future.

We show that, to a large extent, the formation of new couples in rural Ethiopia is characterized by assortative matching. Sorting operates at a variety of levels – wealth, schooling, and work experience – that cannot be summarized into a single additive index. We interpret this result as meaning that grooms do not all rank prospective brides in the same manner, e.g., more educated grooms rank educated brides higher than uneducated grooms. Combined with high inequality in assets brought to marriage, our results suggest that the pairing of prospective brides and grooms favors the reproduction of rural inequality over time.

Using a simple non-cooperative model of bequest at marriage, we examine what factors determine assets brought to marriage. We find that parental background helps predict what individuals bring to their first marriage. Moreover groom's inheritance appears uncorrelated with previous assets brought to marriage. These findings provide some (albeit limited) support to the idea that parents bequeath productive assets to their sons at the time of first marriage. In contrast, the little that daughters receive at marriage is a strong predictor of subsequent inheritance. Amounts involved remain small, however, and the great majority of women receive nothing at marriage or later from their parents. Sibling competition and education of parents are not important determinants of inequality at marriage, but competition among brothers reduces inheritance one for one.

Individual accumulation prior to marriage also plays a role. For the groom, a prior marriage is a strong determinant of land brought to marriage, an indication that peasant associations give land to already

existing households and that husbands keep the land upon dissolution of the union. This is consistent with the description of divorce and inheritance practices as described by rural Ethiopian households themselves (Fafchamps and Quisumbing 2000). Grooms also accumulate livestock over time. In contrast, women hardly ever own land and do not appear to accumulate livestock or retain it upon marriage dissolution. The only exception is assets other than land and livestock, which a small minority of women accumulate over time and across marriages.

Human capital at marriage, either in the form of schooling or work experience, does not seem to be considered as substitutes for wealth. This is probably due to the low level of schooling recorded in the data and to the fact that, in traditional agriculture such as that practiced in Ethiopia, schooling is of little value to farming. Returns to schooling are in general higher in non-farm activity (e.g. Yang 1997, Fafchamps and Quisumbing 1999) but the surveyed rural areas report very little of it. We also find strong evidence that brides, grooms, and their families act strategically on their respective marriage markets by bringing more assets if doing so can yield a better match. We reject the hypothesis that parents of the bride and groom act as one after marriage partners have been identified.

Taken together, these results suggest that the marriage market model provides a reasonable approximation of what goes on in rural Ethiopia, provided it is amended to include bequest motives and multiple ranking. The rich marry the rich, the poor marry the poor, and social stratification is largely passed on from one generation to the next. Parents act strategically in choosing a suitable spouse for their children. Although we find a small number of richly endowed brides, the majority of women in the sample inherit nothing at marriage or afterwards from their parents. Unlike men, most do not appear to accumulate wealth over time and marriages. The marriage market appears to be a major conduit for household and gender inequality in the Ethiopian countryside. To complete this picture, one would need to know how much social mobility there is after marriage, e.g., how fast households can accumulate assets and obtain land from the PA, and how easily they can switch to high income professions. Given the predominantly agrarian nature of the surveyed area and the relative lack of remunerative non-farm activities, we suspect that social mobility is low. This issue deserves more investigation.

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Table 1. Composition of the sample by category of household

Unmarried individuals	**Number**	**Percent**	
Single man living alone	72	5.1%	
Single woman living alone	239	16.8%	
Monogamous couples			21.9%
Monogamous couple living together	877	61.8%	
Monogamous couple, husband away	69	4.9%	
Monogamous couple, wife away	55	3.9%	
Polygamous households			70.5%
Polygamous household living together	81	5.7%	
Male headed part of a polygamous couple residing separately	21	1.5%	
Female headed part of a polygamous couple residing separately	6	0.4%	
			7.6%
Total	1420		

Table 2. Assets at marriage, Inheritance, Human Capital, and Parental Characteristics

	Groom's assets			Bride's assets		
Assets brought to marriage:	Mean	SD	Median	Mean	SD	Median
Land value	2056	5955	377	90	833	0
Livestock value	1337	2833	287	300	1790	0
Jewelry, clothes, linens, utensils and grain	877	1587	448	40	232	0
Total value of assets prior to marriage	4270	7433	1981	430	2035	0
Gifts at marriage (1)	234	761	0	401	885	0
Inheritance after marriage:						
Inherited land	2060	8452	0	75	657	0
Inherited livestock	260	1038	0	80	346	0
Total assets at marriage plus inheritance	6820	11848	3576	987	2395	342
Human capital						
Age at marriage	29.9	11.7	27.3	19.3	8.1	18.3
Literate (2)	33%		0%	13%		0%
At least some primary education	25%		0%	10%		0%
At least some secondary education	7%		0%	2%		0%
Years of farming experience	11.7	10.3	10.0	3.7	5.8	1.0
Years of wage work experience	0.7	2.5	0.0	0.1	0.7	0.0
Years of self-employment experience	0.8	2.9	0.0	0.3	1.5	0.0
Parental characteristics						
Father's land (in hectares)	6.5	74.0	0.6	1.9	9.9	0.4
Father went to school (yes=1)	7%		0%	7%		0%
No. of observations	1179					

All unions included. All values expressed in 1997 Ethiopian Birr.
(1) Gifts made to bride and groom only. A few gifts given to both jointly are divided equally for the purpose of this table.
(2) Either some formal education or some literacy or religious education.

Table 3. Gini distribution of assets at marriage

(All assets measured in 1997 Ethiopian Birr.)	**Groom**	**Bride**	**Both**
Land	0.794	0.977	0.786
Livestock	0.778	0.910	0.761
Other assets	0.659	0.929	0.639
Total	0.642	0.871	0.624

Table 4. Characteristics at marriage by number of marriages

A. Groom	**First marriage**		**Second marriage**		**Third marriage**		**Fourth and above**	
Number of observations	674		273		126		106	
Percentage of all married males	57%		23%		11%		9%	
Assets brought to marriage:								
Land value	1935	153	1945	559	2080	689	3084	806
Livestock value	1128	0	1511	418	1860	869	1596	453
Jewelry, clothes, linens, utensils and grain	853	408	881	479	1109	534	738	469
Total value of assets prior to marriage	3916	1612	4337	2137	5056	3098	5418	3120
Gifts at marriage (1)	281	0	172	0	228	0	108	0
Inheritance after marriage:								
Inherited land	2324	0	1818	0	1403	0	1786	0
Inherited livestock	263	0	267	0	304	0	174	0
Total assets at marriage plus inheritance	6784	3342	6593	3339	6949	4313	7486	4490
Human capital								
Age at marriage	25.5	24.3	33.2	30.3	35.9	34.1	43.8	42.3
Literate (2)	40%	0%	30%	0%	12%	0%	22%	0%
At least some primary education	32%	0%	20%	0%	9%	0%	12%	0%
At least some secondary education	9%	0%	6%	0%	2%	0%	1%	0%
Years of farming experience	9.4	8.0	11.6	10.0	16.1	14.0	21.8	23.0
Years of wage work experience	0.6	0.0	0.7	0.0	1.0	0.0	0.8	0.0
Years of self-employment experience	0.8	0.0	0.7	0.0	1.0	0.0	0.9	0.0
Parental characteristics								
Father's land (in hectares)	7.7	0.6	3.8	0.7	6.4	0.6	6.0	0.8
Father went to school (yes=1)	7%	0%	7%	0%	11%	0%	6%	0%

B. Bride	**First marriage**		**Second marriage**		**Third marriage**		**Fourth and above**	
Number of observations	795		267		79		39	
Percentage of all married females	67%		23%		7%		3%	
Assets brought to marriage:								
Land value	34	0	270	0	83	0	18	0
Livestock value	254	0	447	0	304	0	215	0
Jewelry, clothes, linens, utensils and grain	28	0	70	0	58	0	38	0
Total value of assets prior to marriage	317	0	786	0	444	0	271	0
Gifts at marriage (1)	488	74	246	0	169	0	165	0
Inheritance after marriage:								
Inherited land	57	0	93	0	184	0	105	0
Inherited livestock	72	0	93	0	143	0	23	0
Total assets at marriage plus inheritance	934	359	1219	300	940	310	563	102
Human capital								
Age at marriage	17.4	17.3	22.8	22.4	22.9	20.5	28.0	27.9
Literate (2)	14%	0%	10%	0%	16%	0%	6%	0%
At least some primary education	11%	0%	5%	0%	13%	0%	3%	0%
At least some secondary education	2%	0%	1%	0%	3%	0%	0%	0%
Years of farming experience	3.0	0.0	4.5	2.0	4.6	2.0	9.8	4.0
Years of wage work experience	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Years of self-employment experience	0.3	0.0	0.4	0.0	0.4	0.0	0.1	0.0
Parental characteristics								
Father's land (in hectares)	1.7	0.4	2.9	0.5	1.5	0.0	1.5	0.2
Father went to school (yes=1)	7%	0%	8%	0%	4%	0%	8%	0%

Only currently married people included. All values expressed in 1997 Ethiopian Birr.
(1) Gifts made to bride and groom only. A few gifts given to both jointly are divided equally for the purpose of this table.
(2) Either some formal education or some literacy or religious education.

Table 5. Rank correlation and assortative matching

	First marriage			Subsequent marriages			First marriage bride has:			Subsequent marriages bride has:		
Assets		coef.	p-value		coef.	p-value	no say		a say	no say		a say
Land value	577	0.57	0.00	531	0.53	0.00	0.61	<	0.70	0.64	>	0.60
Livestock value	577	0.65	0.00	532	0.56	0.00	0.60	<	0.77	0.70	>	0.59
Other assets	577	0.57	0.00	532	0.38	0.00	0.61	<	0.70	0.47	>	0.42
Total assets	577	0.53	0.00	531	0.44	0.00	0.53	<	0.67	0.54	>	0.46
Human capital												
Schooling level	549	0.63	0.00	394	0.70	0.00	0.66	<	0.77	0.70	<	0.83
Farming experience	572	0.65	0.00	431	0.60	0.00	0.64	<	0.77	0.62	=	0.62
Wage work experience	572	0.75	0.00	432	0.79	0.00	0.80	<	0.81	0.81	<	0.85
Self-employment experience	577	0.74	0.00	434	0.81	0.00	0.72	<	0.89	0.82	<	0.89
Parents' characteristics												
Father's land	577	0.53	0.00	436	0.49	0.00	0.61	=	0.61	0.58	>	0.47
Father's schooling (yes/no)	562	0.74	0.00	416	0.77	0.00	0.83	>	0.81	0.81	<	0.85

All ranks are computed by district and decades since marriage.

Table 6. Canonical Correlations on Assets and Human Capital at Marriage

A. Wealth and Schooling	**Wealth**		**Schooling**	
First canonical correlation:	coef.	t-value	coef.	t-value
groom index	0.000	0.589	0.531	**10.958**
bride index	0.000	1.077	0.817	**10.962**
coefficient of correlation	0.338			
Second canonical correlation:				
groom index	0.000	**6.429**	-0.043	-0.515
bride index	0.001	**6.407**	-0.062	-0.483
coefficient of correlation	0.206			
Number of observations	942			

B. Asset types	**Value of land**		**Value of livestock**		**Other assets**	
First canonical correlation:	coef.	t-value	coef.	t-value	coef.	t-value
groom index	0.000	**3.041**	-0.000	**-3.136**	0.001	**9.900**
bride index	0.001	**10.326**	0.000	**2.151**	-0.001	**-2.291**
coefficient of correlation	0.310					
Second canonical correlation:						
groom index	-0.000	-0.114	0.000	**6.525**	0.000	0.514
bride index	-0.000	-0.125	0.001	**4.264**	0.004	**4.948**
coefficient of correlation	0.201					
Number of observations	1108					

C. Work experience	**Farming**		**Wage work**		**Self-employment**	
First canonical correlation:	coef.	t-value	coef.	t-value	coef.	t-value
groom index	0.109	**15.825**	0.044	1.740	-0.021	-0.955
bride index	0.192	**15.624**	0.138	1.497	0.077	1.705
coefficient of correlation	0.450					
Second canonical correlation:						
groom index	-0.000	-0.024	0.139	**2.712**	0.327	**7.200**
bride index	-0.035	-1.385	0.854	**4.553**	0.561	**6.127**
coefficient of correlation	0.241					
Number of observations	999					

All variables expressed in deviation from the average for the district/decade of marriage.

Table 7. Canonical Regression on Ranks

First canonical correlation:	Value of assets		Years of Schooling		Experience in: Farming		Wage work		Self-employment	
groom index	0.021	**7.693**	0.038	**10.797**	0.031	**10.949**	0.063	**13.338**	0.070	**15.576**
bride index	0.018	**5.053**	0.036	**6.729**	0.017	**5.057**	0.115	**12.076**	0.056	**7.789**
coefficient of correlation	0.870									
Number of observations	928									

All ranks are computed by district and decades since marriage.

Table 8. Assets Brought to Marriage by the Groom
(dependent variable is the log of the value of all assets brought to marriage, expressed in current value)

	all marriages		**first marriage**		**subsequent marriages**	
Number of observations	1150		647		503	
Pseudo R-squared	0.029		0.042		0.033	
Wealth of parents	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.
Land of father (log +1)	0.257	**2.709**	0.462	**3.512**	0.086	0.645
Whether father went to school	0.043	0.144	-0.224	-0.508	0.161	0.410
Competition among sibblings						
Number of sibblings + self (log)	0.039	0.272	-0.115	-0.567	0.037	0.185
Share of sisters in sibblings	0.196	0.501	0.094	0.170	0.291	0.525
Personal history						
Age at marriage	0.024	**3.013**	0.029	**1.901**	0.018	**1.977**
Number of previous marriages	0.117	1.606	not applicable		0.034	0.406
Time and space (Harresaw ommitted)						
Number of years since marriage	0.010	1.511	0.003	0.337	0.014	1.413
Geblen village dummy	-0.997	-1.693	-0.821	-1.150	-2.128	-2.011
DInki village dummy	1.197	1.595	2.066	2.001	-1.310	-1.125
Yetmen village dummy	1.155	1.388	1.761	1.348	-1.118	-0.907
Shumshaha village dummy	0.115	0.149	0.789	0.745	-2.325	-1.954
Sirbana Godeti village dummy	1.372	1.902	2.492	2.707	-1.482	-1.272
Adele Keke village dummy	-0.368	-0.506	-0.978	-1.011	-1.780	-1.583
Korodegaga village dummy	0.765	1.048	1.010	1.074	-1.526	-1.307
Tirufe Kechema village dummy	0.086	0.134	1.128	1.422	-3.139	-2.895
Imdibir village dummy	0.012	0.014	0.201	0.176	-1.347	-0.961
Aze Deboa village dummy	0.073	0.082	0.363	0.331	-0.698	-0.394
Adado village dummy	-1.635	-1.897	-1.479	-1.357	-2.863	-2.060
Gara Godo village dummy	0.130	0.155	0.928	0.866	-2.112	-1.575
Doma village dummy	0.339	0.385	0.495	0.437	-1.297	-0.939
Debre Birhan village dummy	1.313	1.730	2.015	2.070	-1.297	-1.057
Ethnicity dummies (Tigray excluded)						
Amhara	0.031	0.049	-0.627	-0.765	2.649	2.661
Oromo	0.415	0.698	-0.533	-0.713	3.349	3.353
South-Central	0.502	0.676	-0.207	-0.218	2.817	2.366
Other/mixed	-0.568	-0.839	-1.492	-1.756	2.179	1.935
Religion dummies (Orthodox excluded)						
Muslim	0.113	0.273	0.020	0.035	0.235	0.380
Other Christian	0.374	1.205	0.606	1.451	0.111	0.247
Other	-0.207	-0.405	-0.142	-0.209	-0.348	-0.463
Intercept	5.030	9.324	5.337	6.934	5.131	6.460
Selection-term	2.568		2.664		2.281	
Number of censored observations	102		69		33	
Number of uncensored observations	1048		578		470	
Joint tests:	F-stat	p-value				
Ethnicity	1.01	0.4030				
Religion	0.89	0.4469				

Table 9. Assets Brought to Marriage by the Bride
(dependent variable is the log of the value of all assets brought to marriage, expressed in current value)

	all marriages		**first marriage**		**subsequent marriages**	
Number of observations	1079		746		333	
Pseudo R-squared	0.121		0.168		0.086	
Wealth of parents	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.
Land of father (log +1)	0.825	**2.262**	1.121	**2.430**	0.164	0.299
Whether father went to school	0.882	0.890	0.115	0.090	1.828	1.165
Competition among sibblings						
Number of sibblings + self (log)	0.163	0.287	-0.348	-0.487	0.664	0.711
Share of sisters in sibblings	-0.240	-0.445	-1.236	-1.576	0.425	0.552
Personal history						
Age at marriage	0.087	**2.220**	0.123	**2.135**	0.060	1.122
Number of previous marriages	0.028	0.095	not applicable		-0.559	-1.303
Time and space (Harresaw ommitted)						
Number of years since marriage	-0.038	-1.525	-0.046	-1.482	-0.002	-0.045
Geblen village dummy	-7.428	-3.577	-9.921	-3.821	0.841	0.213
DInki village dummy	-7.157	-2.603	-7.042	-2.035	-6.768	-1.439
Yetmen village dummy	-9.424	-3.168	-11.180	-2.411	-8.301	-1.673
Shumshaha village dummy	-0.662	-0.244	-1.552	-0.451	-0.168	-0.036
Sirbana Godeti village dummy	-10.381	-3.745	-11.947	-3.503	-6.648	-1.379
Adele Keke village dummy	-10.728	-3.940	-12.930	-3.657	-8.909	-2.009
Korodegaga village dummy	-6.054	-2.410	-9.225	-2.862	-0.841	-0.202
Tirufe Kechema village dummy	-7.564	-3.243	-8.969	-3.088	-5.049	-1.227
Imdibir village dummy	-6.009	-1.965	-3.001	-0.761	-8.444	-1.624
Aze Deboa village dummy	-8.543	-2.723	-6.798	-1.719	-5.471	-0.950
Adado village dummy	-11.951	-3.807	-9.041	-2.264	-11.476	-2.186
Gara Godo village dummy	-7.228	-2.505	-5.711	-1.528	-4.560	-0.926
Doma village dummy	-7.682	-2.517	-9.552	-2.343	-2.866	-0.561
Debre Birhan village dummy	0.111	0.042	0.053	0.016	-0.750	-0.159
Ethnicity dummies (Tigray excluded)						
Amhara	3.379	1.401	4.461	1.456	2.825	0.679
Oromo	4.238	1.825	5.621	1.882	2.540	0.672
South-Central	0.671	0.260	-1.782	-0.511	2.908	0.717
Other/mixed	-0.743	-0.287	0.273	0.083	-1.831	-0.411
Religion dummies (Orthodox excluded)						
Muslim	-0.768	-0.557	-0.935	-0.518	0.594	0.285
Other Christian	-0.319	-0.273	-0.731	-0.498	-1.201	-0.617
Other	-1.980	-0.762	-30.081	.	-2.541	-0.721
Intercept	-0.777	-0.413	0.002	0.001	-0.665	-0.197
Selection-term	6.435		6.151		6.018	
Number of censored observations	776		573		203	
Number of uncensored observations	303		173		130	
Joint tests:						
Ethnicity	**2.75**	0.0272				
Religion	0.28	0.8429				

Table 10. Land Brought to Marriage by the Groom
(dependent variable is the log of the value of land brought to marriage, expressed in current value)

	all marriages		**first marriage**		**subsequent marriages**	
Number of observations	1150		647		503	
Pseudo R-squared	0.052		0.054		0.065	
Wealth of parents	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.
Land of father (log +1)	0.759	**3.811**	1.310	**4.433**	0.099	0.376
Whether father went to school	-0.123	-0.193	-0.440	-0.434	-0.506	-0.657
Competition among sibblings						
Number of sibblings + self (log)	-0.296	-0.974	-0.508	-1.105	-0.439	-1.116
Share of sisters in sibblings	0.744	0.897	-1.032	-0.812	2.083	**1.925**
Personal history						
Age at marriage	0.061	**3.666**	0.031	0.919	0.056	**3.151**
Number of previous marriages	0.341	**2.274**	not applicable		-0.023	-0.144
Time and space (Harresaw ommitted)						
Number of years since marriage	-0.083	**-5.695**	-0.085	**-3.948**	-0.085	**-4.516**
Geblen village dummy	-0.958	-0.730	1.262	0.713	-4.956	-2.370
DInki village dummy	1.703	1.031	4.772	1.921	-4.077	-1.704
Yetmen village dummy	2.001	1.108	2.106	0.675	-2.343	-0.934
Shumshaha village dummy	-3.487	-2.030	-3.826	-1.403	-7.867	-3.205
Sirbana Godeti village dummy	3.009	1.948	5.263	2.457	-2.310	-0.976
Adele Keke village dummy	2.366	1.516	3.441	1.520	-3.226	-1.375
Korodegaga village dummy	2.758	1.762	5.615	2.570	-4.081	-1.684
Tirufe Kechema village dummy	0.990	0.708	4.181	2.216	-6.669	-2.864
Imdibir village dummy	4.371	2.242	5.820	2.120	-0.423	-0.148
Aze Deboa village dummy	7.596	3.931	10.863	4.149	1.311	0.375
Adado village dummy	3.356	1.780	5.845	2.240	-2.486	-0.873
Gara Godo village dummy	6.615	3.596	9.784	3.823	0.783	0.283
Doma village dummy	3.232	1.685	4.940	1.830	-1.496	-0.530
Debre Birhan village dummy	1.875	1.124	4.246	1.811	-3.163	-1.263
Ethnicity dummies (Tigray excluded)						
Amhara	-0.060	-0.044	-0.492	-0.254	2.875	1.366
Oromo	-0.618	-0.488	-0.511	-0.303	2.067	0.977
South-Central	-2.097	-1.284	-2.498	-1.118	0.535	0.212
Other/mixed	-2.690	-1.764	-3.255	-1.561	-0.529	-0.224
Religion dummies (Orthodox excluded)						
Muslim	1.367	1.546	0.137	0.106	3.181	2.608
Other Christian	0.460	0.709	-0.286	-0.304	2.094	2.402
Other	-1.064	-0.983	-2.410	-1.526	1.445	0.998
Intercept	0.155	0.134	-0.504	-0.276	3.821	2.533
Selection-term	5.084		5.601		4.235	
Number of censored observations	460		301		159	
Number of uncensored observations	690		346		344	
Joint tests:						
Ethnicity	1.83	0.1213				
Religion	1.61	0.1852				

Table 11. Livestock Brought to Marriage by the Groom
(dependent variable is the log of the value of livestock brought to marriage, expressed in current value)

	all marriages		**first marriage**		**subsequent marriages**	
Number of observations	1152		647		505	
Pseudo R-squared	0.076		0.102		0.058	
Wealth of parents	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.
Land of father (log +1)	0.277	1.362	0.664	**2.330**	0.158	0.541
Whether father went to school	-0.408	-0.602	-1.331	-1.289	-0.360	-0.405
Competition among sibblings						
Number of sibblings + self (log)	0.096	0.294	-0.479	-1.046	0.525	1.127
Share of sisters in sibblings	0.834	0.956	0.458	0.369	0.380	0.303
Personal history						
Age at marriage	0.053	**2.974**	0.072	**2.143**	0.048	**2.284**
Number of previous marriages	0.406	**2.557**	not applicable		0.244	1.282
Time and space (Harresaw ommitted)						
Number of years since marriage	0.026	**1.736**	-0.002	-0.074	0.050	**2.294**
Geblen village dummy	-5.690	-3.576	-8.198	-3.388	-2.629	-1.073
DInki village dummy	4.026	2.186	4.437	1.719	2.389	0.850
Yetmen village dummy	2.158	1.090	2.287	0.725	-0.347	-0.118
Shumshaha village dummy	4.463	2.417	6.557	2.568	1.429	0.502
Sirbana Godeti village dummy	4.141	2.471	7.653	3.592	-0.540	-0.195
Adele Keke village dummy	-3.047	-1.794	-3.579	-1.561	-4.517	-1.640
Korodegaga village dummy	0.556	0.330	-0.057	-0.026	-1.116	-0.396
Tirufe Kechema village dummy	-0.185	-0.123	1.356	0.733	-3.021	-1.137
Imdibir village dummy	-1.476	-0.699	-1.625	-0.604	-0.829	-0.241
Aze Deboa village dummy	1.663	0.800	1.686	0.663	3.958	0.960
Adado village dummy	-6.939	-3.303	-6.462	-2.450	-7.343	-2.095
Gara Godo village dummy	0.798	0.399	2.291	0.909	-0.635	-0.191
Doma village dummy	0.608	0.293	-0.135	-0.050	1.202	0.358
Debre Birhan village dummy	6.367	3.471	8.523	3.517	2.570	0.878
Ethnicity dummies (Tigray excluded)						
Amhara	-0.558	-0.360	-1.642	-0.787	1.033	0.422
Oromo	1.098	0.782	-0.218	-0.125	2.267	0.926
South-Central	0.375	0.210	0.609	0.272	-0.407	-0.136
Other/mixed	-3.606	-2.004	-3.839	-1.564	-3.641	-1.297
Religion dummies (Orthodox excluded)						
Muslim	1.279	1.322	1.761	1.326	1.680	1.149
Other Christian	0.302	0.416	0.568	0.580	0.108	0.100
Other	1.387	1.039	1.347	0.755	1.751	0.859
Intercept	-2.256	-1.850	-2.155	-1.229	-1.149	-0.634
Selection-term	5.200		5.277		4.862	
Number of censored observations	530		334		196	
Number of uncensored observations	622		313		309	
Joint tests:						
Ethnicity	**3.55**	0.0070				
Religion	0.86	0.4619				

Table 12. Other Assets Brought to Marriage by the Groom
(dependent variable is the log of the value of other assets brought to marriage, expressed in current value)

	all marriages		first marriage		subsequent marriages	
Number of observations	1152		647		505	
Pseudo R-squared	0.019		0.036		0.020	
Wealth of parents	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.
Land of father (log +1)	-0.011	-0.096	0.006	0.033	0.084	0.514
Whether father went to school	0.199	0.521	0.395	0.696	0.119	0.244
Competition among sibblings						
Number of sibblings + self (log)	-0.046	-0.249	-0.347	-1.311	0.210	0.835
Share of sisters in sibblings	0.370	0.743	0.631	0.884	-0.031	-0.045
Personal history						
Age at marriage	-0.010	-0.951	-0.057	**-2.881**	0.009	0.813
Number of previous marriages	0.239	**2.592**			0.049	0.470
Time and space (Harresaw ommitted)						
Number of years since marriage	0.001	0.098	-0.021	**-1.785**	0.025	**2.123**
Geblen village dummy	0.269	0.361	0.315	0.345	0.234	0.178
DInki village dummy	1.268	1.335	1.361	1.025	0.098	0.067
Yetmen village dummy	2.946	2.802	3.158	1.892	1.873	1.218
Shumshaha village dummy	1.241	1.271	0.910	0.669	0.300	0.202
Sirbana Godeti village dummy	2.094	2.294	2.595	2.199	0.351	0.241
Adele Keke village dummy	0.050	0.054	-1.144	-0.919	-0.261	-0.186
Korodegaga village dummy	1.290	1.399	0.878	0.731	0.237	0.162
Tirufe Kechema village dummy	1.458	1.795	2.131	2.102	-0.876	-0.645
Imdibir village dummy	-0.542	-0.477	0.328	0.223	-2.625	-1.490
Aze Deboa village dummy	-1.436	-1.268	-0.756	-0.536	-3.102	-1.394
Adado village dummy	-1.791	-1.633	-1.857	-1.324	-2.641	-1.513
Gara Godo village dummy	-1.179	-1.101	-0.592	-0.429	-3.150	-1.866
Doma village dummy	-0.154	-0.138	0.635	0.437	-2.439	-1.404
Debre Birhan village dummy	2.835	2.951	3.197	2.561	0.804	0.525
Ethnicity dummies (Tigray excluded)						
Amhara	-1.385	-1.756	-1.778	-1.691	0.835	0.673
Oromo	-0.300	-0.400	-1.334	-1.394	2.302	1.848
South-Central	0.258	0.273	-1.745	-1.426	4.151	2.775
Other/mixed	-0.602	-0.704	-1.756	-1.608	2.017	1.438
Religion dummies (Orthodox excluded)						
Muslim	-0.004	-0.007	0.089	0.123	-0.050	-0.064
Other Christian	0.694	1.748	1.698	3.096	-0.384	-0.686
Other	0.591	0.906	1.355	1.526	-0.472	-0.505
Intercept	4.490	6.545	6.977	6.966	2.445	2.461
Selection-term	3.221		3.386		2.814	
Number of censored observations	231		153		78	
Number of uncensored observations	921		494		427	
Joint tests:						
Ethnicity	1.37	0.2419				
Religion	1.13	0.3341				

Table 13. Assets Brought to Marriage by the Groom and Human Capital
(dependent variable is the log of the value of all assets brought to marriage, expressed in current value)

	all assets		**land**		**livestock**		**other assets**	
Number of observations	1124		1124		1126		1126	
Pseudo R-squared	0.031		0.056		0.078		0.021	
Wealth of parents	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.
Land of father (log +1)	0.253	**2.709**	0.733	**3.733**	0.295	1.453	-0.010	-0.081
Whether father went to school	0.015	0.051	-0.138	-0.213	-0.428	-0.617	0.115	0.293
Competition among sibblings								
Number of sibblings + self (log)	0.006	0.039	-0.414	-1.366	0.087	0.266	-0.097	-0.518
Share of sisters in sibblings	0.206	0.529	0.958	1.167	0.890	1.015	0.438	0.877
Personal history								
Age at marriage	0.024	**2.608**	0.061	**3.265**	0.048	**2.378**	-0.013	-1.123
Number of previous marriages	0.067	0.914	0.289	**1.908**	0.350	**2.162**	0.208	**2.224**
Human capital								
Schooling index	-0.002	-0.040	0.170	**1.975**	-0.076	-0.801	-0.020	-0.380
Years of farming experience	0.012	1.309	0.031	1.639	0.007	0.344	0.008	0.709
Years of wage work experience	-0.081	**-2.605**	-0.228	**-3.313**	-0.052	-0.739	-0.045	-1.114
Years of self-employment experience	0.033	1.207	-0.082	-1.377	0.021	0.316	0.082	**2.370**
Time and space (Harresaw ommitted)								
Number of years since marriage	0.004	0.529	-0.082	**-5.273**	0.013	0.773	-0.006	-0.693
Geblen village dummy	-0.994	-1.702	-1.011	-0.779	-5.717	-3.590	0.225	0.301
DInki village dummy	1.116	1.505	1.440	0.885	3.863	2.096	1.118	1.177
Yetmen village dummy	1.260	1.527	2.031	1.135	2.018	1.016	2.946	2.792
Shumshaha village dummy	0.201	0.261	-3.370	-1.976	4.393	2.366	1.207	1.227
Sirbana Godeti village dummy	1.415	1.983	3.050	2.000	4.115	2.453	2.109	2.310
Adele Keke village dummy	-0.099	-0.137	2.742	1.771	-3.034	-1.778	0.168	0.182
Korodegaga village dummy	0.951	1.309	3.023	1.946	0.495	0.292	1.349	1.453
Tirufe Kechema village dummy	0.280	0.435	1.090	0.781	-0.003	-0.002	1.541	1.875
Imdibir village dummy	0.456	0.506	5.756	2.925	-1.102	-0.512	-0.586	-0.504
Aze Deboa village dummy	0.298	0.339	7.960	4.168	1.805	0.868	-1.355	-1.197
Adado village dummy	-1.499	-1.757	3.619	1.940	-6.811	-3.240	-1.829	-1.666
Gara Godo village dummy	0.097	0.117	6.609	3.643	0.722	0.361	-1.355	-1.268
Doma village dummy	0.393	0.453	3.178	1.679	0.473	0.228	-0.226	-0.202
Debre Birhan village dummy	1.367	1.822	1.842	1.120	6.315	3.442	2.794	2.910
Ethnicity dummies (Tigray excluded)								
Amhara	0.118	0.193	0.136	0.101	-0.472	-0.306	-1.336	-1.705
Oromo	0.371	0.637	-0.784	-0.631	1.198	0.858	-0.307	-0.412
South-Central	0.460	0.632	-2.217	-1.383	0.371	0.209	0.218	0.232
Other/mixed	-0.442	-0.666	-2.372	-1.590	-3.476	-1.943	-0.529	-0.623
Religion dummies (Orthodox excluded)								
Muslim	0.015	0.036	1.331	1.528	1.179	1.223	-0.134	-0.256
Other Christian	0.289	0.946	0.317	0.496	0.220	0.305	0.615	1.555
Other	-0.209	-0.413	-0.866	-0.808	1.367	1.024	0.565	0.862
Intercept	5.121	8.970	-0.289	-0.237	-1.682	-1.289	4.806	6.554
Selection-term	2.516		4.981		5.165		3.192	
Number of censored observations	96		443		516		223	
Number of uncensored observations	1028		681		610		903	
Joint tests:								
Ethnicity	**3.33**	0.0190	**5.67**	0.0007	0.26	0.8531	2.37	0.0693
Religion	**2.50**	0.0408	**5.22**	0.0004	0.37	0.8296	1.84	0.1180

Table 14. Assets Brought to Marriage by the Bride and Human Capital
(dependent variable is the log of the value of all assets brought to marriage, expressed in current value)

	all assets		**livestock**		**other assets**	
Number of observations	994		994		994	
Pseudo R-squared	0.133		0.205		0.128	
Wealth of parents	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.
Land of father (log +1)	0.767	**2.087**	0.037	0.084	1.256	**1.659**
Whether father went to school	0.985	0.937	1.299	1.105	3.966	**1.790**
Competition among sibblings						
Number of sibblings + self (log)	0.103	0.176	2.098	**2.852**	-1.401	-1.203
Share of sisters in sibblings	-0.269	-0.490	0.280	0.436	-1.059	-0.906
Personal history						
Age at marriage	0.094	**2.224**	0.020	0.397	0.317	**3.508**
Number of previous marriages	0.112	0.373	-0.166	-0.459	2.408	**3.763**
Human capital						
Schooling index	-0.268	-1.231	-0.082	-0.342	-0.791	-1.447
Years of farming experience	-0.055	-0.994	-0.078	-1.201	-0.319	**-2.226**
Years of wage work experience	0.199	0.490	0.370	0.872	-0.777	-0.720
Years of self-employment experience	-0.091	-0.462	0.175	0.809	0.103	0.325
Time and space (Harresaw ommitted)						
Number of years since marriage	-0.043	-1.545	-0.031	-0.979	-0.044	-0.704
Geblen village dummy	-7.711	-3.710	-3.063	-1.398	-54.458	.
DInki village dummy	-8.587	-3.000	-0.230	-0.065	-70.147	.
Yetmen village dummy	-9.729	-3.186	-5.544	-1.424	-14.609	-1.791
Shumshaha village dummy	-0.293	-0.106	7.249	2.066	-5.529	-0.910
Sirbana Godeti village dummy	-8.938	-3.177	-6.150	-1.765	-10.897	-1.799
Adele Keke village dummy	-10.563	-3.824	-6.457	-1.954	-10.865	-2.100
Korodegaga village dummy	-6.148	-2.386	-6.004	-1.893	-0.681	-0.153
Tirufe Kechema village dummy	-7.727	-3.237	-7.440	-2.444	-3.033	-0.716
Imdibir village dummy	-5.637	-1.758	0.464	0.095	-2.180	-0.373
Aze Deboa village dummy	-7.058	-2.186	-0.154	-0.032	-2.921	-0.494
Adado village dummy	-12.006	-3.642	-6.140	-1.229	-5.965	-1.042
Gara Godo village dummy	-6.963	-2.335	-4.411	-0.956	-2.297	-0.423
Doma village dummy	-6.825	-2.158	-32.812	.	-0.744	-0.133
Debre Birhan village dummy	0.210	0.079	7.297	2.121	-7.566	-1.307
Ethnicity dummies (Tigray excluded)						
Amhara	3.304	1.357	0.363	0.114	-1.810	-0.344
Oromo	3.348	1.425	2.329	0.789	3.052	0.685
South-Central	-0.171	-0.065	-6.157	-1.433	0.055	0.012
Other/mixed	-0.886	-0.344	-5.264	-1.468	2.909	0.508
Religion dummies (Orthodox excluded)						
Muslim	-0.154	-0.104	0.149	0.084	-1.080	-0.331
Other Christian	-0.558	-0.445	1.097	0.592	-1.589	-0.759
Other	-3.544	-1.093	-36.396	.	-4.864	-0.967
Intercept	0.151	0.075	-6.056	-2.500	-10.811	-2.542
Selection-term	6.363		6.233		8.804	
Number of censored observations	717		793		922	
Number of uncensored observations	277		201		72	
Joint tests:						
Ethnicity	0.48	0.6967	1.06	0.3661	1.81	0.1435
Religion	0.72	0.5792	0.82	0.5155	1.75	0.1363

Note: there are not enough uncensored observations to estimate a similar regression for land brought by bri

Table 15. Assets Brought to Marriage by the Groom and Marriage Market
(dependent variable is the log of the value of all assets brought to marriage, expressed in current value)

	all assets		**land**		**livestock**		**other assets**	
Number of observations (1)	1005		503		838		985	
PseudoR-squared	0.077		0.119		0.150		0.155	
Marriage market	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.
Slope of marriage function (log)	0.659	**13.477**	0.930	**10.272**	1.993	**17.879**	1.667	**27.067**
Wealth of parents								
Land of father (log +1)	0.165	**1.764**	0.513	**2.277**	0.005	0.031	0.024	0.244
Whether father went to school	-0.180	-0.589	0.486	0.664	-0.493	-0.803	-0.161	-0.496
Competition among sibblings								
Number of sibblings + self (log)	0.049	0.357	-0.136	-0.372	0.055	0.193	0.001	0.004
Share of sisters in sibblings	0.272	0.715	0.245	0.254	0.418	0.546	-0.376	-0.955
Personal history								
Age at marriage	0.017	**1.953**	0.024	1.084	0.004	0.229	-0.010	-1.087
Number of previous marriages	0.039	0.513	-0.033	-0.184	0.419	**2.756**	0.154	**2.027**
Human capital								
Schooling index	0.016	0.390	0.103	0.996	-0.064	-0.758	-0.032	-0.756
Years of farming experience	0.016	**1.826**	0.043	**2.000**	0.032	1.776	0.009	1.011
Years of wage work experience	-0.043	-1.416	-0.456	**-3.877**	-0.069	-1.149	-0.021	-0.643
Years of self-employment experience	0.034	1.303	-0.131	-1.472	0.089	1.438	0.054	**2.012**
Village x period dummies	60 dummies (15 villages x 4 periods) included but not shown							
Intercept	3.759	5.158	5.838	3.270	5.511	2.516	2.427	3.321
Selection-term	2.282		3.832		3.840		2.289	
Number of censored observations	93		177		350		208	
Number of uncensored observations	912		326		488		777	

Note: (1) some observations are lost because they are fully determined by the village x period dummies.

Table 16. Assets Brought to Marriage by the Bride and Marriage Market
(dependent variable is the log of the value of all assets brought to marriage, expressed in current value)

	all assets		**land**		**livestock**		**other assets**	
Number of observations (1)	926		451		768		884	
PseudoR-squared	0.206		0.233		0.283		0.214	
Marriage market	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.	Coef.	t- stat.
Slope of marriage function (log)	0.882	**4.946**	1.181	**3.301**	0.841	**3.682**	0.758	1.345
Wealth of parents								
Land of father (log +1)	0.835	**2.513**	1.891	1.543	0.305	0.757	0.179	0.213
Whether father went to school	0.612	0.659	-8.567	-1.472	1.242	1.238	3.519	**1.691**
Competition among sibblings								
Number of sibblings + self (log)	-0.006	-0.010	-4.197	**-2.037**	1.845	**2.667**	-2.180	**-1.772**
Share of sisters in sibblings	-0.205	-0.395	-0.955	-0.625	0.282	0.495	-2.057	-1.456
Personal history								
Age at marriage	0.090	**2.257**	0.156	1.015	-0.050	-1.016	0.268	**2.885**
Number of previous marriages	0.040	0.140	-0.597	-0.511	0.054	0.158	2.833	**3.877**
Human capital								
Schooling index	-0.259	-1.319	0.417	0.650	-0.069	-0.319	-1.483	**-2.159**
Years of farming experience	-0.041	-0.776	0.371	**2.393**	-0.028	-0.461	-0.145	-0.986
Years of wage work experience	0.417	0.857	-10.676	.	0.381	0.731	-1.029	-0.810
Years of self-employment experience	0.083	0.446	0.714	1.571	0.212	0.982	0.309	0.824
Village x period dummies	60 dummies (15 villages x 4 periods) included but not shown							
Intercept	1.952	0.934	-3.040	-0.474	-4.603	-1.861	-0.068	-0.016
Selection-term	5.219		7.876		4.806		7.232	
Number of censored observations	680		415		599		826	
Number of uncensored observations	246		36		169		58	

Note: (1) some observations are lost because they are fully determined by the village x period dummies.

Table 17. Testing Pooling of Parental Resources
(dependent variable is the log of the value of all assets brought to marriage by both spouses)

	first marriage		subsequent marriages	
Number of observations	578		457	
Pseudo R-squared	0.048		0.075	
Wealth of parents	Coef.	t	Coef.	t
Land of groom's father (log +1)	0.476	**3.298**	0.083	0.916
Land of bride's father (log +1)	-0.073	-0.380	0.040	0.372
Whether groom's father went to school	-0.418	-0.915	0.004	0.013
Whether bride's father went to school	0.639	1.433	0.176	0.535
Competition among sibblings				
Number of groom's sibblings + self (log)	-0.020	-0.078	-0.174	-1.067
Share of sisters in groom's sibblings	-0.189	-0.267	-0.061	-0.143
Number of bride's sibblings + self (log)	0.105	0.348	0.410	**2.303**
Share of sisters in bride's sibblings	0.052	0.133	0.184	1.053
Personal history				
Groom's age at marriage	0.040	**1.813**	0.033	**3.804**
Bride's age at marriage	-0.017	-0.584	-0.029	**-2.264**
Time and space (Harresaw ommitted)				
Number of years since marriage	0.004	0.348	-0.008	-0.999
Geblen village dummy	-1.412	-1.920	-1.270	-1.757
DInki village dummy	2.006	1.808	-0.217	-0.263
Yetmen village dummy	1.123	0.810	-0.369	-0.424
Shumshaha village dummy	0.721	0.642	-0.912	-1.090
Sirbana Godeti village dummy	2.100	2.137	-1.023	-1.250
Adele Keke village dummy	-1.694	-1.656	-0.135	-0.165
Korodegaga village dummy	0.649	0.627	-0.316	-0.381
Tirufe Kechema village dummy	0.470	0.560	-1.737	-2.275
Imdibir village dummy	-0.392	-0.324	-0.419	-0.444
Aze Deboa village dummy	0.052	0.044	-0.079	-0.066
Adado village dummy	-1.905	-1.639	-2.004	-2.158
Gara Godo village dummy	0.439	0.386	-1.546	-1.716
Doma village dummy	0.121	0.101	-0.965	-1.038
Debre Birhan village dummy	1.795	1.739	0.315	0.371
Ethnicity dummies (Tigray excluded)				
Amhara	-0.872	-0.996	1.845	**2.599**
Oromo	-0.660	-0.820	2.475	**3.495**
South-Central	-0.382	-0.377	2.444	**3.064**
Other/mixed	-1.736	**-1.926**	1.755	**2.318**
Religion dummies (Orthodox excluded)				
Muslim	-0.026	-0.043	-0.045	-0.107
Other Christian	0.449	1.004	-0.352	-1.085
Other	-0.202	-0.281	-0.817	-1.541
Intercept	5.750	**6.039**	5.553	**8.930**
Selection-term	2.643		1.567	
Number of censored observations	63		11	
Number of uncensored observations	515		446	
Test that coefficients are equal:	F-stat	p-value	F-stat	p-value
land of father of bride and of groom	**5.48**	0.004	0.49	0.616
schooling of father of bride and of groom	1.27	0.281	0.15	0.860